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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,104

03/30/2004

Kenichi Torii

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11/01/2006

STAAS & HALSEY LLP

SUITE 700

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EXAMINER

DIACOU, ARI M

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/812,104		TORII ET AL.	
	Examiner		Art Unit	
	Ari M. Diacou		3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 35 is/are pending in the application.
- 4a) Of the above claim(s) 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Supplemental Action

1. This action is written in response to a call received from applicant's representative that the previous action did not address all of the claims. Claim 35 was not examined. Based on the time the applicant realized the error, it was decided according to 710.06 of the MPEP that the applicant's new date of response be set to 1 month from the mailing of this action.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1, 2, and 4, drawn to a Raman amplifier and species previously elected, classified in class 359, subclass 334.
 - II. Claim 35, drawn to a method of pumping an optical amplifier, classified in class 359, subclass 341.3.
3. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the method may be used to operate an optical amplifier employing Optical Time Domain Reflectometry apparatus.

Art Unit: 3663

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

1. Claims 35 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11-25-2005.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the axes of the graphs in figures 4, 5, 17 and 21 require quantification. Applicant is advised to employ the services of a competent patent

Art Unit: 3663

draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Akasaka et al. (USP No. 6292288).

- Regarding claim 1, Akasaka discloses a Raman amplifier for supplying pumping lights to an amplification medium through which is propagated a wavelength division multiplexed signal light obtained by multiplexing a plurality of signal lights of different wavelengths, to amplify the wavelength division multiplexed signal light due to a Raman effect [Abstract], comprising:
 - a first pumping light generating section that generates a plurality of pumping lights arranged at equal wavelength spacing in a signal light wavelength band where said plurality of signal lights are arranged, which is shifted to a shorter wavelength side in accordance with the wavelength

- width corresponding to a Raman shift frequency; [Fig. 3, A] [Col. 8, lines 10-35] [Fig. 15] [Col. 14, lines 42-64]
- a second pumping light generating section that generates pumping lights of one or more wavelengths arranged in a wavelength band on at least one of a shorter wavelength side and a longer wavelength side than a wavelength band of the pumping lights generated by said first pumping light generating section, the wavelength and power of which are set so that peak wavelength spacing of a Raman gain in the signal light wavelength band is substantially equal to each other; and [Fig. 3, B] [Col. 8, lines 10-35] [Fig. 15] [Col. 14, lines 42-64]
 - a multiplexing section that multiplexes the pumping lights generated respectively by said first and second pumping light generating sections to supply the multiplexed pumping light to said amplification medium. [Fig. 3, #13] [Col. 14, lines 42-64]
- Regarding claim 4, Akasaka discloses a Raman amplifier according to claim 1, wherein the wavelength allocation is adopted, in which the signal light wavelength band is narrower than a wavelength band corresponding to the Raman shift frequency, and a signal light wavelength band and a pumping light wavelength band are separated from each other. [Figures 12-17]

Claim Rejections - 35 USC § 103

Art Unit: 3663

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akasaka. Akasaka discloses the invention with all the limitations of claim 1, but fails to disclose the use of a gain equalizer. In the background however, Akasaka teaches that one

should use a gain equalizer to reduce the amplitude of gain ripples to under 1 dB. [Col. 1, lines 19-46]. Since the instant application shows in figure 15, that the ripples were of the ~3 dB magnitude before gain flattening, and <1dB after gain flattening (at ~1530 nm), the applicant seems to read on Akasaka's teaching. Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to place a gain flattening filter in a multi-pump Raman amplifier, for the advantage increased control of the gain profile.

Conclusion

9. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

10. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

11. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMD 10/26/2006


JACK KEITH
SUPERVISORY PATENT EXAMINER